

the two (2) month extension.

IN THE CLAIMS

Cancel claims 1-23 without prejudice. Add claims 24-32, which are rewritten consolidations of claims 4, 5, 7, 9, 10, and 16-18, including limitations of claims upon which each such claim depends.

Applicant herein affirms election of Group I, and Applicant acknowledges the Examiner's withdrawal of claims 19 (sic), 20 (sic), and 21 from further consideration in this application, as being drawn to a non-elected invention.

Please add the following new claims:

1 24. A method for making an infectious adenovirus which comprises contacting a cell with or
2 introducing into a cell:

3 a. a first nucleic acid sequence being a plasmid comprising a circularized adenovirus DNA
4 molecule having a deletion of an adenoviral packaging signal, and which, by itself, in the absence
5 of intermolecular recombination, is incapable of generating an infectious, packageable adenovirus;
6 and

7 b. a second nucleic acid sequence which, by itself, in the absence of intermolecular
8 recombination, is incapable of generating an infectious, packageable adenovirus, and encoding
9 adenovirus sequences which, in the absence of adenoviral replication factors provided in trans or
10 intermolecular recombination with said first nucleic acid sequence, are incapable of encoding an
11 infectious, packageable adenovirus;

12 provided that said first and said second nucleic acid sequences each comprise a head-to-head ITR
13 junction and sufficient overlapping adenoviral nucleic acid sequences such that homologous
14 recombination may occur between said first and said second nucleic acid sequences, whereby said
15 first and said second nucleic acids recombine to form said infectious adenovirus.

1 25. The method according to claim 24 wherein said adenovirus DNA additionally comprises at
2 least one of (i) a deletion of, or (ii) a modification in, an adenoviral gene selected from the
3 group consisting of adenoviral E1 sequences 3' of said packaging signal, adenoviral fibre
4 gene sequences, adenoviral E3 gene sequences, and adenoviral E4 gene sequences.

1 26. A method for making an infectious adenovirus which comprises contacting a cell
2 with or introducing into a cell:

3 a. a first nucleic acid sequence encoding adenovirus sequences and which, by itself, in the
4 absence of intermolecular recombination, is incapable of generating an infectious, packageable
5 adenovirus; and

6 b. a second nucleic acid sequence, which is a plasmid formed by combination of (i) at least
7 one of the shuttle plasmids selected from the group consisting of pDC111, pDC112, pDC113,
8 pDC114, pDC115, pDC116, pDC117, and pDC118, and (ii) a polycloning site or a foreign DNA
9 or an expression cassette, and which second nucleic acid sequence, by itself, in the absence of
10 intermolecular recombination, is incapable of generating an infectious, packageable adenovirus;
11 provided that said first and said second nucleic acid sequences each comprise a head-to-head ITR
12 junction and sufficient overlapping adenoviral nucleic acid sequences such that homologous
13 recombination may occur between said first and said second nucleic acid sequences, whereby said
14 first and said second nucleic acids recombine to form said infectious adenovirus.

1 27. A recombinant adenovirus vector system comprising:

2 a. a first nucleic acid sequence encoding adenovirus sequences and which, by itself, in
3 the absence of intermolecular recombination, is incapable of generating an infectious,
4 packageable adenovirus, said first nucleic acid sequence comprising a head-to-head
5 ITR junction and sufficient overlapping adenoviral nucleic acid sequences such that
6 homologous recombination with homologous sequences in a second nucleic acid
7 sequence may occur; and

8 b. the second nucleic acid sequence, which is a plasmid formed by combination of (i)
9 at least one of the shuttle plasmids selected from the group consisting of pDC111,
10 pDC112, pDC113, pDC114, pDC115, pDC116, pDC117, and pDC118, and (ii) a
11 polycloning site or a foreign DNA or an expression cassette, and which second
12 nucleic acid sequence, by itself, in the absence of intermolecular recombination, is
13 incapable of generating an infectious, packageable adenovirus; said second nucleic
14 acid sequence comprising a head-to-head ITR junction and sufficient overlapping
15 adenoviral nucleic acid sequences to permit homologous recombination with said
16 first nucleic acid sequence;

17 whereby said first and said second nucleic acids homologously recombine in a cell to form
18 said infectious adenovirus.

1 28. A recombinant adenovirus vector system comprising:

2 a. a first nucleic acid sequence encoding adenovirus sequences, and which, by itself, in
3 the absence of intermolecular recombination, is incapable of generating an infectious,
4 packageable adenovirus, said first nucleic acid sequence comprising a head-to-head
5 ITR junction and sufficient overlapping adenoviral nucleic acid sequences such that
6 homologous recombination with homologous sequences in a second nucleic acid
7 sequence may occur; and

8 b. the second nucleic acid sequence which, by itself, in the absence of intermolecular
9 recombination, is incapable of generating an infectious, packageable adenovirus; said
10 second nucleic acid sequence comprising a head-to-head ITR junction, an adenoviral
11 packaging signal, and sufficient overlapping adenoviral nucleic acid sequences to
12 permit homologous recombination with said first nucleic acid sequence;

13 whereby said first and said second nucleic acids homologously recombine in a cell to form
 said infectious, packageable adenovirus, and wherein said cell expresses adenoviral E1.

1 29. A kit for construction of recombinant adenovirus vectors comprising:

- 2 (A) a first nucleic acid sequence encoding adenovirus sequences and which, by itself, in
3 the absence of intermolecular recombination, is incapable of generating an infectious,
4 packageable adenovirus, and said first nucleic acid sequence comprising a head-to-
5 tail ITR junction and sufficient adenoviral sequences to permit homologous
6 recombination with similar sequences in a second nucleic acid sequence;
- 7 (B) the second nucleic acid sequence which is a plasmid formed by combination of (i)
8 at least one of the shuttle plasmids selected from the group consisting of pDC111,
9 pDC112, pDC113, pDC114, pDC115, pDC116, pDC117, and pDC118, and (ii) a
10 polycloning site or a foreign DNA or an expression cassette, and which, by itself, in
11 the absence of intermolecular recombination, is incapable of generating an infectious,
12 packageable adenovirus, and said second nucleic acid sequence comprising a head-
13 to-head ITR junction and sufficient adenoviral sequences to permit homologous
14 recombination with similar sequences in said first nucleic acid; and
- 15 (C) a cell wherein, when said component (A) and said component (B) are cotransfected
16 and recombined through homologous recombination, an infectious recombinant
17 adenovirus vector is produced.

1 30. A recombinant adenovirus vector system comprising:

- 2 a. a first nucleic acid sequence comprising a deletion in the adenoviral fibre gene, and
3 encoding other adenovirus sequences, and which, by itself, in the absence of
4 intermolecular recombination, is incapable of generating an infectious, packageable
5 adenovirus, said first nucleic acid sequence comprising a head-to-head ITR junction
6 and sufficient overlapping adenoviral nucleic acid sequences such that homologous
7 recombination with homologous sequences in a second nucleic acid sequence may
8 occur; and
- 9 b. the second nucleic acid sequence which, by itself, in the absence of intermolecular
10 recombination, is incapable of generating an infectious, packageable adenovirus; said
11 second nucleic acid sequence comprising a head-to-head ITR junction, an adenoviral

12 packaging signal, and sufficient overlapping adenoviral nucleic acid sequences to
13 permit homologous recombination with said first nucleic acid sequence;
14 whereby said first and said second nucleic acids homologously recombine in a cell to form
15 said infectious, packageable adenovirus.

1 31. A recombinant adenovirus vector system comprising:

- 2 a. a first nucleic acid sequence encoding adenovirus sequences and which, by itself, in
3 the absence of intermolecular recombination, is incapable of generating an infectious,
4 packageable adenovirus, said first nucleic acid sequence comprising a head-to-head
5 ITR junction and sufficient overlapping adenoviral nucleic acid sequences such that
6 homologous recombination with homologous sequences in a second nucleic acid
7 sequence may occur; and
8 b. the second nucleic acid sequence which, by itself, in the absence of intermolecular
9 recombination, is incapable of generating an infectious, packageable adenovirus; said
10 second nucleic acid sequence comprising a head-to-head ITR junction, an adenoviral
11 packaging signal, an adenoviral gene mutation, and sufficient overlapping adenoviral
12 nucleic acid sequences to permit homologous recombination with said first nucleic
13 acid sequence;

14 whereby said first and said second nucleic acids homologously recombine in a cell to form
15 said infectious, packageable adenovirus, and wherein said adenoviral gene mutation is
rescued into said infectious, packageable adenovirus.

1 32. The recombinant adenovirus vector system according to claim 31 wherein said adenoviral
2 gene mutation rescued into said adenoviral vector recombinant is comprised of at least one
3 of a mutation in the adenoviral fibre gene, a mutation in the adenoviral E4 gene, and a
4 mutation in the adenoviral E3 gene.